

INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP2005/000558

A. CLASSIFICATION OF SUBJECT MATTER
 C07K14/075 C12N15/861 A61K48/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
C12N C07K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, EMBASE, Sequence Search, BIOSIS, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category ^o | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------------------|---|-----------------------|
| Y | WO 03/000851 A (THE TRUSTEES OF THE UNIVERSITY OF PENNSYLVANIA; GAO, GUANGPING; WILSON) 3 January 2003 (2003-01-03) claims 1-33 ----- WO 03/046124 A (THE TRUSTEES OF THE UNIVERSITY OF PENNSYLVANIA; WILSON, JAMES, M; GAO,) 5 June 2003 (2003-06-05) pages 2-26; claim 8 ----- WO 98/10087 A (TRUSTEES OF THE UNIVERSITY OF PENNSYLVANIA; WILSON, JAMES, M; FARINA,) 12 March 1998 (1998-03-12) pages 4-6 ----- -/- | 1-42 1-42 1-42 |

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

^o Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

Date of mailing of the international search report

6 December 2005

16.01.2006

Name and mailing address of the ISA

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category ^b | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------------------|--|-----------------------|
| P, Y | ROY S ET AL: "Complete nucleotide sequences and genome organization of four chimpanzee adenoviruses" 1 July 2004 (2004-07-01), VIROLOGY, ACADEMIC PRESS, ORLANDO, US, PAGE(S) 361-372, XP004519188 ISSN: 0042-6822 abstract; figure 3 ----- | 1-42 |
| Y | FARINA S F ET AL: "Replication-defective vector based on a Chimpanzee adenovirus" JOURNAL OF VIROLOGY, THE AMERICAN SOCIETY FOR MICROBIOLOGY, US, vol. 75, no. 23, December 2001 (2001-12), pages 11603-11613, XP002957497 ISSN: 0022-538X abstract ----- | 1-42 |
| Y | FITZGERALD J C ET AL: "A Simian Replication-Defective Adenoviral Recombinant Vaccine to HIV-1 Gag" JOURNAL OF IMMUNOLOGY, THE WILLIAMS AND WILKINS CO. BALTIMORE, US, vol. 170, February 2003 (2003-02), pages 1416-1422, XP002974900 ISSN: 0022-1767 page 1421 ----- | 1-41 |
| Y | GALL J G D ET AL: "Construction and characterization of hexon-chimeric adenoviruses: Specification of adenovirus serotype" JOURNAL OF VIROLOGY, THE AMERICAN SOCIETY FOR MICROBIOLOGY, US, vol. 72, no. 12, December 1998 (1998-12), pages 10260-10264, XP002327347 ISSN: 0022-538X figure 1 ----- | 1-42 |
| Y | WU HONGJU ET AL: "Construction and characterization of adenovirus serotype 5 packaged by serotype 3 hexon." JOURNAL OF VIROLOGY, vol. 76, no. 24, December 2002 (2002-12), pages 12775-12782, XP002349550 ISSN: 0022-538X abstract ----- | 1-42 |
| | | -/- |

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|----------|--|-----------------------|
| Y | <p>SIEMENS D R ET AL: "Cutting edge: restoration of the ability to generate CTL in mice immune to adenovirus by delivery of virus in a collagen-based matrix." 15 January 2001 (2001-01-15), JOURNAL OF IMMUNOLOGY (BALTIMORE, MD. : 1950) 15 JAN 2001, VOL. 166, NR. 2, PAGE(S) 731 - 735 , XP002349619 ISSN: 0022-1767 the whole document</p> <p>-----</p> | 1-42 |
| A | <p>CRAWFORD-MIKSZA L ET AL: "ANALYSIS OF 15 ADENOVIRUS HEXON PROTEINS REVEALS THE LOCATION AND STRUCTURE OF SEVEN HYPERVARIABLE REGIONS CONTAINING SEROTYPE-SPECIFIC RESIDUES" 1 March 1996 (1996-03-01), JOURNAL OF VIROLOGY, THE AMERICAN SOCIETY FOR MICROBIOLOGY, US, PAGE(S) 1836-1844 , XP002912228 ISSN: 0022-538X figure 1</p> <p>-----</p> | 1-42 |
| A | <p>WIGAND R ET AL: "CHIMPANZEE ADENOVIRUSES ARE RELATED TO FOUR SUBGENERA OF HUMAN ADENOVIRUSES" January 1989 (1989-01), INTERVIROLOGY, PAGE(S) 1-9 , XP002052837 ISSN: 0300-5526</p> <p>-----</p> | |

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Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.: 3,4 complete, 13 partially because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210

3. Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of Item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1,5,6-12,13,14

An isolated chimpanzee nucleic acid sequence according to SEQ ID No. 1, a vector comprising SEQ ID No. 1, a host cell, a method and a vaccine

2. claims: 1,5,6-12,13,15

An isolated chimpanzee nucleic acid sequence according to SEQ ID No. 2, a vector comprising SEQ ID No. 2, a host cell, a method and a vaccine

3. claim: 2

A recombinant chimpanzee serotype comprising combination of hexon genes and fiber gene sequences. These claims encompass 529 combinations of hexon and fiber sequences.

4. claims: 16-21

A general method of boosting an antigen-specific immune response in a mammal

5. claims: 22-26

A general method of eliciting an immune response in a mammal

6. claims: 27-34

A method of inducing an immune response against an antigen derived from an infectious agent

7. claims: 35-42

A general method of breaking host tolerance to a self-antigen

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.2

Claims Nos.: 3,4 complete, 13 partially

Present claims 3, 4 relate to a combination of hexon and fiber nucleic acid sequences derived from CHAd isolates. A search on the basis of CHAd isolates for which no sequence data have been determined is not possible. The same applies with regard to claim 13 insofar as said claim refers to claim 4.

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.5), should the problems which led to the Article 17(2) declaration be overcome.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

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| Patent document cited in search report | | Publication date | | Patent family member(s) | | Publication date |
|--|---|------------------|--|--|--|--|
| WO 03000851 | A | 03-01-2003 | | CA 2450470 A1 EP 1409748 A2 JP 2004537300 T US 2004171807 A1 | | 03-01-2003 21-04-2004 16-12-2004 02-09-2004 |
| WO 03046124 | A | 05-06-2003 | | AU 2002365366 A1 BR 0214350 A CA 2466431 A1 CN 1578678 A EP 1453543 A2 JP 2005511035 T MX PA04004876 A | | 10-06-2003 10-05-2005 05-06-2003 09-02-2005 08-09-2004 28-04-2005 30-07-2004 |
| WO 9810087 | A | 12-03-1998 | | AU 4255397 A | | 26-03-1998 |